# DENON

Hi-Fi Stereo Tuner

# SERVICE MANUAL MODEL TU-450/450L

TU450 2-BAND (AM-FM) STEREO TUNER TU450L 3-BAND (LW-MW-FM) STEREO TUNER



### TABLE OF CONTENTS

### NIPPON COLUMBIA CO., LTD.

### **SPECIFICATIONS**

**FM SECTION** 

Frequency Range: 87.50 ~ 108.00 MHz

Antenna:

75 ohm unbalanced/300 ohm

balanced

Usable Sensitivity:

1.0 µV (11.2 dBf)

S/N 50 dB Sensitivity:

Stereo: 23 µV (38.5 dBf)

Monaural: 3.1 µV (21.2 dBf) 70 dB

Image Rejection: IF Rejection:

85 dB

Spurious Response Rejection: 80 dB AM Suppression:

50 dB

**Effective Selectivity:** 

75 dB (±400 kHz)

Capture Ratio:

1.5 dB

Frequency Response:

20 Hz to 15 kHz +0.2 dB

Signal-to-noise Ratio:

Monaural: 80 dB Stereo: 76 dB

Total Harmonic Distortion:

Monaural

1 kHz 0.3% (at 100% modulation)

Stereo Stereo Separation: 1 kHz 0.7% (at 90% modulation) 1 kHz 40 dB

Muting Level:

10 µV

Output Level (at 100%

modulation):

0.6 V (75 kHz deviation)

AM SECTION

MEDIUM WAVE Frequency Range:

522 ~ 1611 kHz

Antenna Terminal: **Usable Sensitivity:** 

Terminal Type, with Loop Antenna

18 uV

Selectivity: 33 dB (9 kHz) Image Rejection: 35 dB

Signal-to-noise Ratio: 53 dB Total Harmonic Distortion: 0.6%

Output Level (at 30%

modulation):

0.18 V LONG WAVE (For TU-450L only)

Frequency Range:

153 ~ 360 kHz

**Usable Sensitivity:** 

30 µV

Selectivity:

35 dB (±9 kHz)

Image Rejection:

50 dB

Signal-to-noise Ratio:

50 dB

**OTHERS** 

Power Supply:

AC 220 V/50 Hz (for Europe)

AC 240 V/50 Hz (for England for EK

Version only)

Power Consumption:

AC 7 W

Dimensions: Net Weight:

434 mm (17-3/32") W x 70 mm

(2-3/4") H x 238 mm (9-3/8") D

3.0 kg (6 lbs. 10 oz)

Design and specifications are subject to change without prior notice.

NOTE:

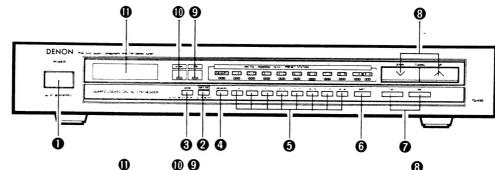
The following codes correspond to the appropriate models.

E2 for Europe, EK for U.K.

This Service Manual is prepared based on E2 BLACK Version.

### **FUNCTIONS OF PANEL CONTROLS**

TU-450



TU-450L

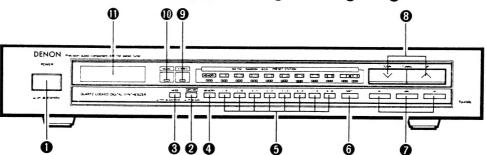


Fig. 1

- POWER (Power On/Standby Switch)
- MPX NR (MPX Noise Reduction Switch)
  - 🔔 auto, 🛌 off
- MODE (Mode Switch)
  - auto/mute, mono
- MEMORY (Memory Button) \*
- PRESET CHANNEL 1 to 8 (Preset Channel Buttons)
- SHIFT (Change Memory)
  - 1-8 ↔ 9-16

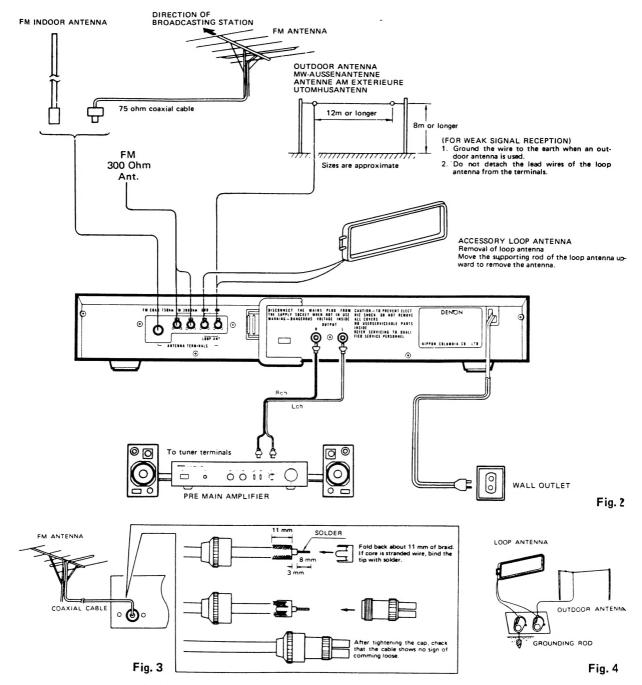
(7)SELECT (Selector Buttons)

FM, AM: TU-450, FM, MW, LW: TU-450L

- (8) TUNING (Tuning Buttons) ∨ down, ∧ up
  - STEREO (Stereo Indicator)
- (10) SIGNAL (Signal-Strength Indicators)
- DIGITAL FREQUENCY INDICATOR

(9)

### CONNECTIONS



#### ANTENNA INSTALLATION

### LEAD WIRE FM INDOOR ANTENNA

A lead wire indoor antenna can be used in a wood-frame house where broadcasting stations are located nearby and trong signals can be received. While receiving an FM program, extend the antenna. Orient for optimal reception and mount the antenna on the wall or ceiling.

- \* In general, FM indoor antenna might not consistently assure stable reception, due to environmental changes. In such case use an FM indoor antenna temporarily until an outdoor antenna is installed.
- FM OUTDOOR ANTENNA CONNECTION (Fig. 3)

Use 75-ohm coaxial cable or 300 ohm ribbon feeder, to connect the outdoor antenna and the tuner. The 75-ohm axial cable (3C-2V, 5C-2V) is preferable to obtain better performance of the tuner.

\* Contact your local dealer for details on selection and installation of the FM outdoor antenna.

When connecting the coaxial cable to the antenna terminal using the DIN connector, please refer to the procedures in Fig. 3.

### • MW and LW ANTENNA CONNECTION (Fig. 4)

Since this model is provided with a high-performance loop antenna at the back panel, this accessory antenna can effectively be used for optimal reception in places where broadcasting stations are located nearby and relatively strong signals are received with low noise.

Orient the loop antenna horizontally for obtaining optimal reception.

In places where strong, clear signals are not received due to the particular location and/or environmental conditions, connect a vinyl lead wire to the MW/LW antenna terminals and hold it to the wall or lintel.

In places where broadcasting stations are too far away and only weak signals are received, or where signals are blocked by obstacles, install an outdoor antenna for MW/LW.

\* Even if an outdoor antenna is installed, do not detach the loop antenna.

### **GROUNDING**

If there is much noise during reception of a radio program, it is recommended that a grounding wire be used to ground the unit.

Connect a thick vinyl lead wire to the "GND" terminal, and wind the unconnected bare end around a metal water pipe, a grounding rod, or a grounded copper plate.

\* Do not connect a grounding wire to a gas pipe in order to prevent explosion of fire.

### **BLOCK DIAGRAM**

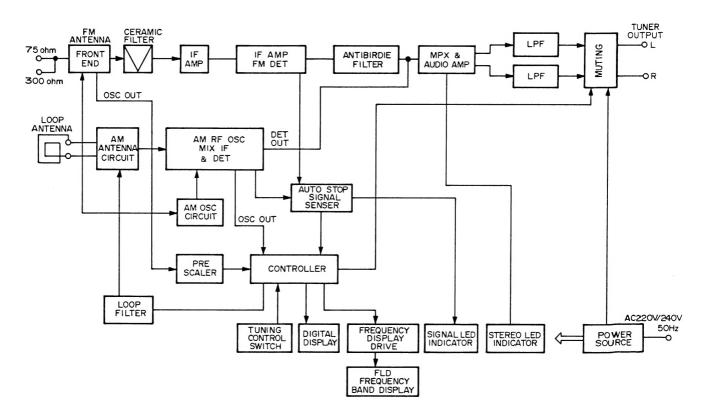


Fig. 5

### REMOVE OF EACH SECTION

- 1. How to remove the top cover (Fig. 6)
- (1) Remove the four screws on both sides.
- (2) Raise the back of the top cover and remove it.

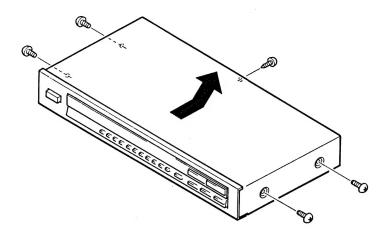
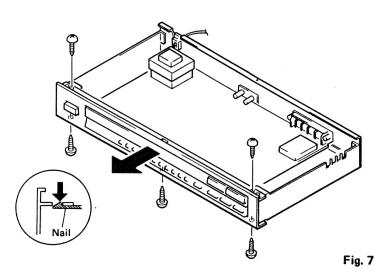


Fig. 6

### 2. How to remove the Front Panel Ass'y (Fig. 7)

- (1) Remove the five screws.
- (2) Remove the nail in the center of the Front Panel.
- (3) Pull out the F/Panel forwardly.



### 3. How to remove the Inner Panel (Fig. 8)

- (1) Detach the four connectors.
- (2) Remove the two screws.

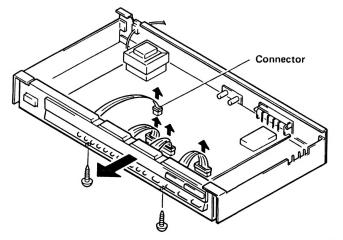
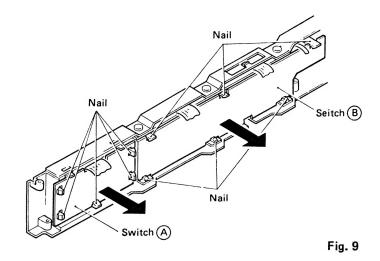


Fig. 8

### 4. How to remove the Switch Unit P.W.B. (Fig. 9)

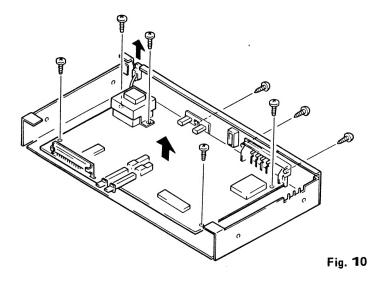
- A. Switch (A) Unit P.W.B.
  - (1) Remove the four nails.
- B. Switch (B) Unit P.W.B.
  - (1) Remove the six nails.



### 5. How to remove the Main Unit P.W.B. (Fig. 10) Tuner Unit P.W.B.

(1) Remove the three screws of the Unit and the

- two screws for connecting the transformer.
- (2) Detach the cord bush of the AC cord.
- (3) Remove the three screws of the Back Panel.



### METHOD OF ADJUSTMENTS

When making adjustments, be sure the power supply is at the rated voltage and the room air is on normal conditions with respect to temperature and humidity.

### INSTRUMENT HOOK-UP DIAGRAM

FΜ

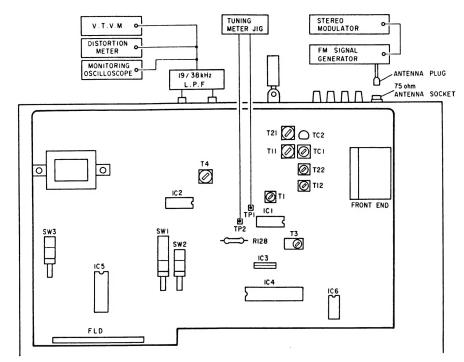


Fig. 11

AM

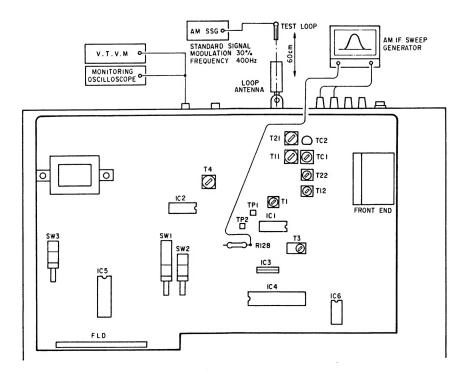


Fig. 12

### Tuning Meter Jig

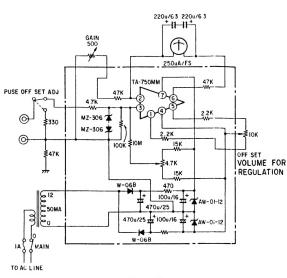


Fig. 13

### FM/MPX ALIGNMENT (Fig. 11)

### INSTRUMENT CONNECTIONS AND SETTING

#### Preparation

### 1. Connection of Measuring Equipment

FΜ

(1) The modulated output of the stereo modulator is supplied to an FM signal generator. Connect the output end of the FM signal generator to the antenna terminal (75 ohm) of the unit. Set the stereo modulator to the following conditions:

L + R: 67.5 kHz

67.5 kHz deviation

1 kHz (internal modulation frequency)

Pilot: 7.5 kHz deviation

- (2) Connect a filter jig of 19 kHz to the output terminal L of the unit. Then, connect the output of the filter jig to a distortion meter, the output of which is in turn connected to an oscilloscope for monitoring.
- (3) Connect tuning jigs to TP. 1 and 2.

### LW or MW

(1) The AM signal generator should be set as follows:

Modulation: 30%, modulation frequency: 400 Hz (Antenna input signal level: about 60 dB/m).

|      | Alignment                    | Tuning               | Input                |           |                    |   |                     | Our                 | tput                   | Adj                 |                           |                            |
|------|------------------------------|----------------------|----------------------|-----------|--------------------|---|---------------------|---------------------|------------------------|---------------------|---------------------------|----------------------------|
| Step | Item                         | Frequency<br>Setting | Type                 | Frequency | Input Level        | Modulation  | Coupling            | Type                | Connect to             | Points              | Adjust to                 |                            |
| 1    | Tuning Center                | 98 MHz               | FM SSG,<br>Mono      | 98 MHz    | 60 dBμ             | None  | Antenna<br>Terminal | Center Meter        | T.P. 1, 2              | T-1                 | Center of<br>Tuning Meter | Function: FM<br>Mode: Auto |
| 2    | Distortion<br>(Stereo)       | 98 MHz               | FM SSG<br>Stereo (L) | 98 MHz    | 60 dBμ             | Main: 1 kHz L-ch<br>67.5 kHz Dev.<br>Pilot: 7.5 kHz<br>Dev. | Antenna<br>Terminal | Distortion<br>Meter | Output<br>Terminal (L) | IFT on<br>Front End | Minimum<br>Distortion     | Function: FM<br>Mode: Auto |
| 3    | Noise Center<br>& Distortion |                      |                      | Repea     | t 1, 2 to obtain n | ninimum distortion a  | nd same time        | indicating of cen   | ter meter at cente     | er condition.       |                           |                            |

### LW AND MW ALIGNMENT (Fig. 12)

| 1 | IF              | _                               | IF Sweep | -        | Input Level is<br>not over to<br>work A.G.C. | -             | Antenna<br>Terminal | Oscilloscope      | R128                   | T-3  | Maximum<br>Height and<br>Best<br>Symmetry<br>Curve | Function: MW<br>Center of<br>Wave Form:<br>450 kHz |
|---|-----------------|---------------------------------|----------|----------|--|---------------|---------------------|-------------------|------------------------|------|--|--|
|   | Tracking        | 603 kHz                         | AM SSG   | 603 kHz  | Input Level is<br>not over to<br>work A.G.C. | 400 Hz<br>30% | Loop<br>Antenna     | Audio<br>V.T.V.M. | Output<br>Terminal (L) | T-11 | Maximum<br>Output                                  | Function: MW                                       |
| 2 | MW              | Alignment<br>MW 1404 kHz AM SSG |          | 1404 kHz | Input Level is<br>not over to<br>work A.G.C. | 400 Hz<br>30% | Loop<br>Antenna     | Audio<br>V.T.V.M. | Output<br>Terminal (L) | TC-1 | Maximum<br>Output                                  | Function: MW                                       |
|   | Tracking        | 163 kHz                         | AM SSG   | 163 kHz  | Input Level is<br>not over to<br>work A.G.C. | 400 Hz<br>30% | Loop<br>Antenna     | Audio<br>V.T.V.M. | Output<br>Terminal (L) | T-21 | Maximum .<br>Output                                | Function: LW                                       |
| 3 | Alignment<br>LW | 330 kHz                         | AM SSG   | 330 kHz  | Input Level is<br>not over to<br>work A.G.C. | 400 Hz<br>30% | Loop<br>Antenna     | Audio<br>V.T.V.M. | Output<br>Terminal (L) | TC-2 | Maximum<br>Output                                  | Function: LW                                       |

### TUNING UNIT Alignment Points (Component Side) ETC0852B TUNER UNIT (for 3 Band)

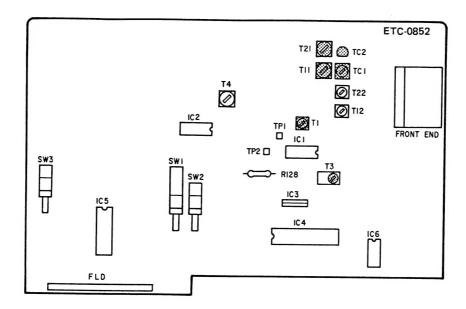


Fig. 14

### ETC0861D TUNER UNIT (for 2 Band)

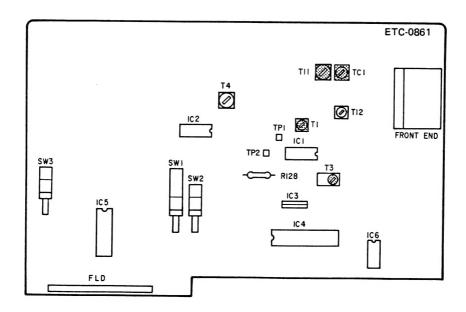


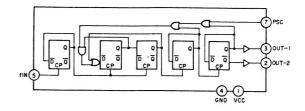
Fig. 15

### **SEMICONDUCTORS**

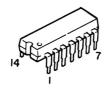
• IC's

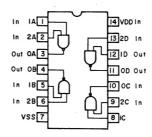
TD6104P (Toshiba)



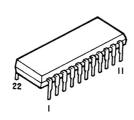


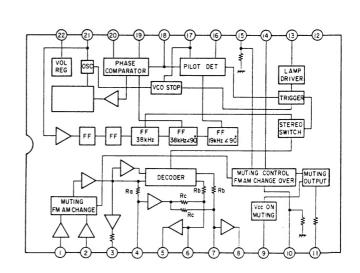
HD14011BP (Hitachi)



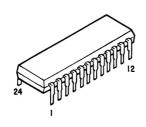


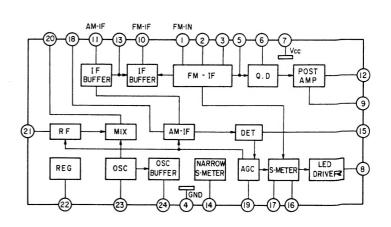
LA3401 (Sanyo)





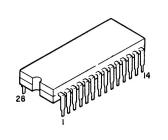
LA1266 (Sanyo)

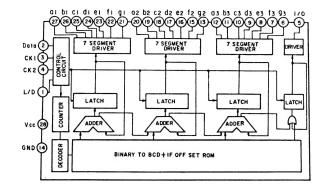




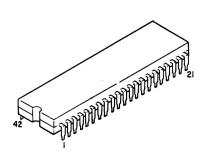
### TU450/450L

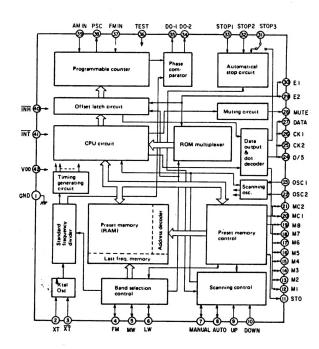
### TD6301AP (Toshiba)





TD9147P (Toshiba)



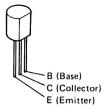


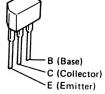
### • TRANSISTORS (including FET)

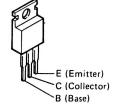
2SC461(C) 2SC1815(BL) 2SA1048(Y/GR) 2SC2458(Y/GR)

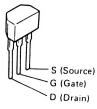
2SD880(Y)

(FET) 2SK365(BL/GR)









### • DIODES, LEDS

HZ7A-1 HZ12C-2

1S2076

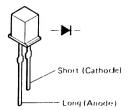
SVC321SP-D2

PB103M

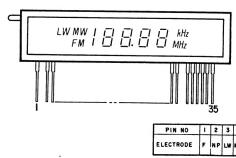
(LED) LT9233 (Green) LT9213R (Red)

Black Sky Blue





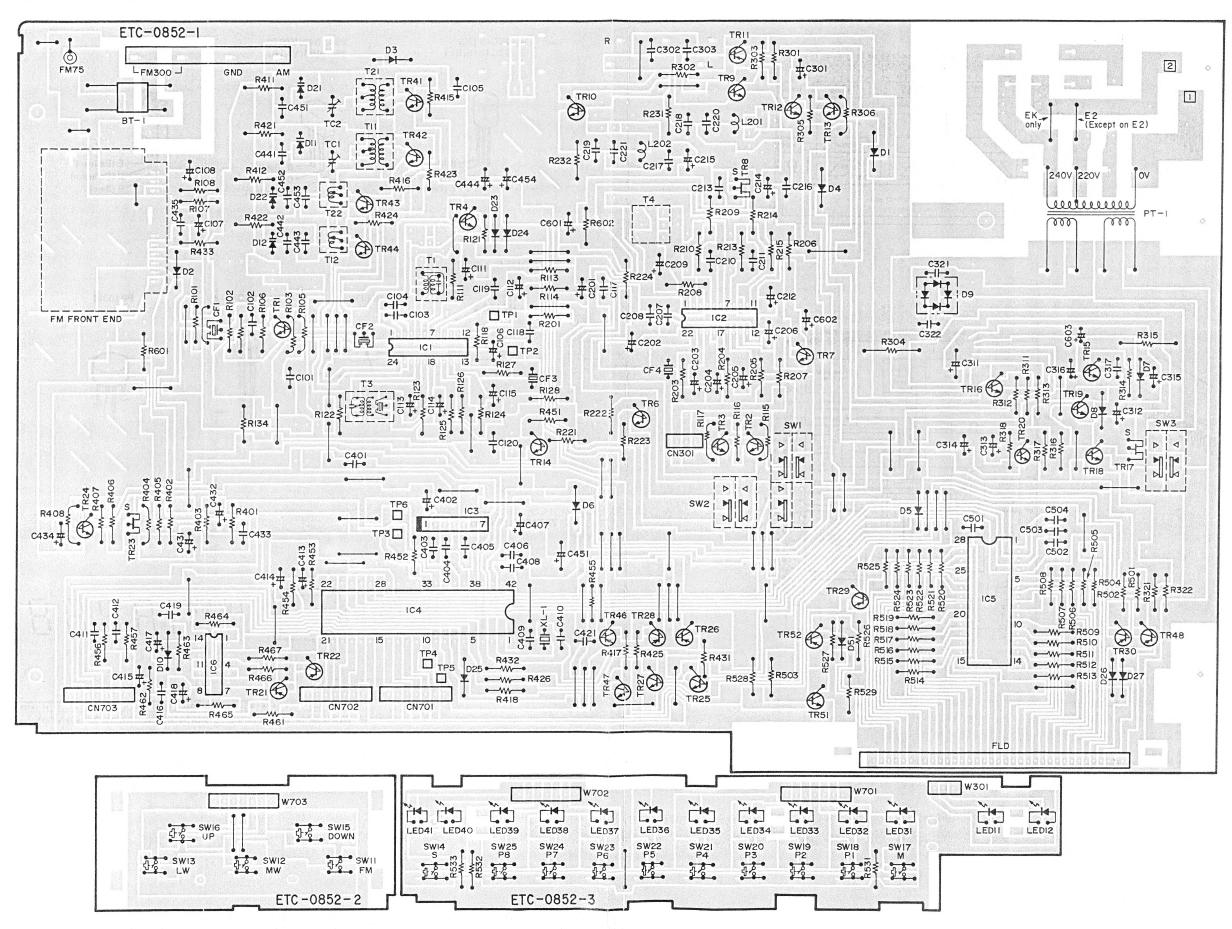
7BT168A (Futaba)



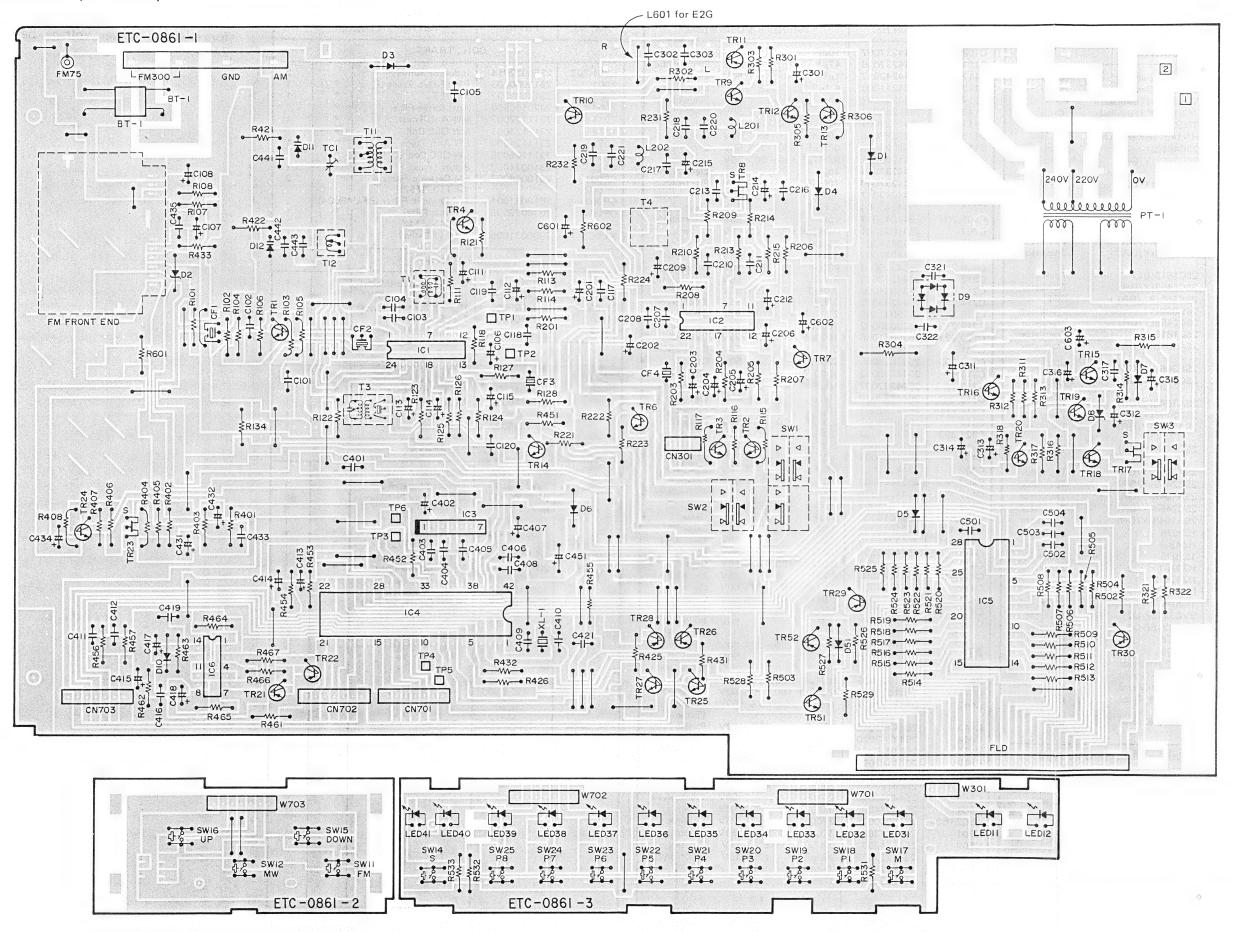


| IN NO | 1 | 2  | 3  | 4  | 5   | 6 | 7                | 8        | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22         | 23         | 24 | 25 | 26 | 27 | 28  | 29 | 30 | 31 | 32 | 33        | 34 | 35 |
|-------|---|----|----|----|-----|---|------------------|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|------------|------------|----|----|----|----|-----|----|----|----|----|-----------|----|----|
| TRODE | F | NP | LW | MW | KHz | G | FM<br>MHz<br>D.P | 65<br>65 | 94 | 14 | •4 | d4 | c4 | 64 | 04 | 93 | 13 | G  | •3 | d3 | c3 | <b>b</b> 3 | <b>a</b> 3 | g2 | 12 | •2 | qS | c 2 | NP | 95 | 92 | 01 | bi<br>e i | gl | F  |

### ETC0852B TUNER UNIT (for 3 Band)



### ETC0861D TUNER UNIT (for 2 Band)



### ETC0852B TUNER UNIT PARTS LIST (for 3 Band)

| Ref. No.       | Part No.                 | Part Name & Desc                | riptions                              |
|----------------|--------------------------|---------------------------------|---------------------------------------|
|                | SEN                      | MICONDUCTORS                    |                                       |
| IC001          | 2630438008               | LA1266 (Sanyo)                  | IC •                                  |
|                | 2630439007               | LA3401 (Sanyo)                  | ic                                    |
| IC002          |                          | •                               |                                       |
| IC003          | 2630232000               | TD6104P (Toshiba)               | IC                                    |
| IC004          | 2620452104               | TC9147BP (Toshiba)              | IC                                    |
| IC005          | 2620453006               | TD6301AP (Toshiba)              | ic                                    |
|                |                          | HD14011BP (Hitachi)             | ic                                    |
| IC006          | 2620300007               |                                 | •                                     |
| TR001          | 2730025023               | 2SC461(C)                       | Transistor                            |
| TR002          | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
| ~004<br>rR006, | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
| 007            |                          | 001/005/01/003                  |                                       |
| TR008          | 2750053004               | 2SK365(BL/GR)                   | FET                                   |
| TR009,         | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
| 010            |                          |                                 |                                       |
| TR011          | 2710194000               | 2SA1048(Y/GR)                   | Transistor                            |
|                |                          |                                 |                                       |
| R012           | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
| ~014           |                          |                                 |                                       |
| rR015          | 2730198015               | 2SC1815(BL)                     | Transistor                            |
|                |                          | 2SC2458(Y/GR)                   |                                       |
| TR016          | 2730322001               |                                 | Transistor                            |
| R017           | 2750053004               | 2SK365(BL/GR)                   | FET                                   |
| TR018          | 2740065002               | 2SD880(Y)                       | Transistor                            |
| ΓR019          | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
|                |                          |                                 |                                       |
| FR020          | 2730198015               | 2SC1815(BL)                     | Transistor                            |
| TR021,         | 2710194000               | 2SA1048(Y/GR)                   | Transistor                            |
| 022            |                          | 1                               |                                       |
| TR023          | 2750053004               | 2SK365(BL/GR)                   | FET                                   |
|                |                          |                                 |                                       |
| rR024,         | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
| 025            |                          |                                 |                                       |
| R026           | 2710194000               | 2SA1048(Y/GR)                   | Transistor                            |
| R027           | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
|                |                          |                                 |                                       |
| R028           | 2710194000               | 2SA1048(Y/GR)                   | Transistor                            |
| ·030           |                          |                                 |                                       |
| R041           | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
| -044           |                          |                                 |                                       |
| _              | 0740101                  | 0044040440=1                    |                                       |
| R046           | 2710194000               | 2SA1048(Y/GR)                   | Transistor                            |
| R047           | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
| R048           | 2710194000               | 2SA1048(Y/GR)                   | Transistor                            |
|                |                          |                                 |                                       |
| R051           | 2730322001               | 2SC2458(Y/GR)                   | Transistor                            |
| R052           | 2710194000               | 2SA1048(Y/GR)                   | Transistor                            |
| 001            | 2760049008               | 1S2076                          | Diode                                 |
|                |                          |                                 |                                       |
| 002            | 2760185014               | HZ4B-3                          | Zener                                 |
| 003~006        | 2760049008               | 1S2076                          | Diode                                 |
| 007            | 2760051054               | HZ7A-1                          | Zener                                 |
|                |                          |                                 |                                       |
| 8000           | 2760255038               | HZ12C-2                         | Zener                                 |
| 0009           | 2760446009               | PB103M                          |                                       |
| 010            | 2760049008               | 1S2076                          | Diode                                 |
|                |                          |                                 |                                       |
| 0011,012       | 2760302004               | SVC321SP-D2                     | Varactor                              |
| 021,022        | 2760302004               | SVC321SP-D2                     | Varactor                              |
| 023~027        | 2760049008               | 1S2076                          | Diode                                 |
|                |                          |                                 |                                       |
| 051            | 2760049008               | 1S2076                          | Diode                                 |
| E011           | 3939173005               | LT9213R (Red)                   | LED                                   |
| E012           | 3939356000               | LT9233 (Green)                  | LED                                   |
|                | 3939356000               | LT9233 (Green)                  | LED                                   |
| E031           |                          |                                 |                                       |
| .E032          | 3939173005               | LT9213R (Red)                   | LED                                   |
| 039            |                          |                                 |                                       |
| E040,          | 3939356000               | LT9233 (Green)                  | LED                                   |
| 041            | 50000000                 |                                 |                                       |
| RESIS          | TORS (not inclu          | l<br>ded Carbon Film ±5%, 1/4\  | W Type)                               |
| 304            | 2410193000               | 2.2k ohm ±5% 1/2W               | / Carbon Filr                         |
|                |                          |                                 | A A A A A A A A A A A A A A A A A A A |
| 315            | 2440033020               | 220 ohm ±5% 1W                  | Metal Oxid                            |
|                |                          |                                 | (NBF)                                 |
|                | CA                       | APACITORS                       |                                       |
| 001            | 2538014003               | 0.01µF ±20% 400V                | (AC) Ceramio                          |
|                |                          |                                 |                                       |
| 101            | 2531024003               | 0.01µF +80,-20% 50V             |                                       |
| 102~104        | 2531026001               | 0.047µF +80,-20% 50V            | Ceramic                               |
| 102 - 104 1    |                          |                                 |                                       |
|                | 2531024003               | 1 11 11 11 11 +811 - 71% 5117   |                                       |
| 105            | 2531024003<br>2544237036 | 0.01μF +80,-20% 50V<br>47μF 16V | Electrolytic                          |

|                      | r                        | <b>,</b>  |
|----------------------|--------------------------|---|
| Ref. No.             | Part No.                 | Part Name & Descriptions                                    |
| C108                 | 2544237007               | 10μF 16V Electrolytic                                       |
| C111                 | 2544237036               | 47μF 16V Electrolytic                                       |
| C112<br>C113         | 2544243017<br>2544241006 | 1μF 50V Electrolytic 4.7μF 35V Electrolytic                 |
| C113                 | 2544237007               | 10μF 16V Electrolytic                                       |
| C115                 | 2544243033               | 3.3 µF 50V Electrolytic                                     |
| C117                 | 2531026001               | 0.047µF +80,-20% 50V Ceramic                                |
| C118                 | 2533627000               | 100pF ±5% 50V Ceramic                                       |
| C119<br>C120         | 2531024003<br>2531026001 | 0.01μF +80,-20% 50V Ceramic<br>0.047μF +80,-20% 50V Ceramic |
| C201                 | 2544237001               | 10μF 16V Electrolytic                                       |
| C202                 | 2544237049               | 100µF 16V Electrolytic                                      |
| C203                 | 2544243017               | 1μF 50V Electrolytic  |
| C204                 | 2544243004               | 0.47μF 50V Electrolytic                                     |
| C205,206<br>C207     | 2544243017<br>2531026001 | 1μF 50V Electrolytic<br>0.047μF +80,-20% 50V Ceramic        |
| C207                 | 2533639001               | 330pF ±5% 50V Ceramic                                       |
| C209                 | 2544237007               | 10µF 16V Electrolytic                                       |
| C210,211             | 2534350004               | 680pF ±5% 50V Ceramic                                       |
| C212                 | 2544243033               | 3.3µF 50V Electrolytic                                      |
| C213<br>C214,215     | 2531024003<br>2544243033 | 0.01μF +80,-20% 50V Ceramic<br>3.3μF 50V Electrolytic       |
| C214,213             | 2539031069               | 2700pF ±10% 25V Ceramic                                     |
| C218,219             | 2539030002               | 1000pF ±10% 25V Ceramic                                     |
| C220,221             | 2539031056               | 1800pF ±10% 25V Ceramic                                     |
| C301                 | 2544243004               | 0.47μF 50V Electrolytic                                     |
| C302,303             | 2533635005<br>2544239092 | 220pF ±5% 50V Ceramic<br>1000µF 25V Electrolytic            |
| C311<br>C312         | 2544239092               | 1000μF 25V Electrolytic<br>10μF 16V Electrolytic            |
| C313                 | 2544237049               | 100μF 16V Electrolytic                                      |
| C314~316             | 2544237007               | 10μF 16V Electrolytic                                       |
| C317                 | 2531024003               | 0.01µF +80,—20% 50V Ceramic                                 |
| C321,322             | 2531024003               | 0.01µF +80,-20% 50V Ceramic                                 |
| C351<br>C401         | 2590004006<br>2531024003 | 22000µF Backup Capacitor<br>0.01µF +80,—20% 50V Ceramic     |
| C401                 | 2544235025               | 47μF 10V Electrolytic                                       |
| C403~406             | 2531024003               | 0.01µF +80,-20% 50V Ceramic                                 |
| C407                 | 2544235038               | 100µF 10V Electrolytic                                      |
| C408                 | 2531024003               | 0.01µF +80,-20% 50V Ceramic                                 |
| C409,410<br>C411,412 | 2533618006<br>2531024003 | 43pF ±5% 50V Ceramic<br>0.01µF +80,-20% 50V Ceramic         |
| C413,414             | 2544243020               | 2.2µF 50V Electrolytic                                      |
| C415                 | 2544243004               | 0.47µF 50V Electrolytic                                     |
| C416                 | 2531024003               | 0.01µF +80,-20% 50V Ceramic                                 |
| C417,418<br>C419     | 2544241006<br>2531024003 | 4.7µF 35V Electrolytic 0.01µF +80,-20% 50V Ceramic          |
| C419                 | 2531024003               | 0.01µF +80,-20% 50V Ceramic                                 |
| C431                 | 2544237049               | 100μF 16V Electrolytic                                      |
| C432                 | 2543016009               | 1μF 50V Electrolytic  |
| 0400                 | 000400000                | (By Pole)<br>0.022µF +80.—20% 50V Ceramic                   |
| C433<br>C434         | 2531025002<br>2549011008 | 0.022µF +80,-20% 50V Ceramic<br>1µF 50V Electrolytic        |
| U7U7                 | 2040011000               | (Low Leak)  |
| C435                 | 2531024003               | 0.01µF +80,-20% 50V Ceramic                                 |
| C441                 | 2531026001               | 0.047µF +80,-20% 50V Ceramic                                |
| C442                 | 2533125007               | 15pF ±5% 50V Ceramic<br>(Temp.)                             |
| C443                 | 2554201049               | 390pF ±5% 50V Plastic Film                                  |
| C444                 | 2544243020               | 2.2μF 50V Electrolytic                                      |
| C451                 | 2531026001               | 0.047μF +80,-20% 50V Ceramic                                |
| C452                 | 2533143005               | 82pF $\pm 5\%$ 50V Ceramic (Temp.)                          |
| C453                 | 2554127000               | 180pF ±5% 50V Plastic Film                                  |
| C454                 | 2544243020               | 2.2μF 50V Electrolytic                                      |
| C501                 | 2531024003               | 0.01µF +80,-20% 50V Ceramic                                 |
| C502~504             | 2539030028               | 2200pF ±10% 25V Ceramic                                     |
| C601<br>C602         | 2544243033<br>2544243033 | 3.3μF ±20% 50V Electrolytic<br>0.47μF ±20% 50V Electrolytic |
| C602                 | 2544237052               | 220μF ±20% 16V Electrolytic                                 |
| TC001                | 2130022008               | Trimmer Condenser 1   |
| TC002                | 2130037006               | Trimmer Condenser 1   |
|                      |                          | ·   |
|                      |                          |   |

| 1 | Ref. No.   | Part No.   | Part Name & Des   | criptions |   |
|---|--|--|---|-----------|---|
|   |  | С  | OIL, TRANS  |           |   |
|   | L201,202<br>T001<br>T003<br>T004<br>T011<br>T012<br>T021<br>T022<br>BT1<br>CF001,<br>002<br>CF003<br>CF004<br>XL001<br>SW001<br>SW002<br>SW003 | 2350032014<br>2312060008<br>2313028007<br>2320106006<br>2311122002<br>2311123001<br>2311124000<br>2311125009<br>2310074009<br>2610064007<br>2610031001<br>2610079005<br>3990031005 | Inductor 39mH FM IF Det. Trans AM IFT Anti Birdie Filter MW Ant. Trans MW OSC Coil LW Ant. Trans LW OSC Coil Balun Trans FM Ceramic Filter (SFT10.7MS2) AM Ceramic Filter (BFU Ceramic Filter (CSB456F11) X-tal (7.2MHz)  WITCHES  1P Push Switch (Mode) 1P Push Switch (Power) | 450C4)    | 2<br>1<br>1<br>1<br>1<br>1<br>1<br>2<br>1<br>1<br>1 |
|   | SW011<br>~025  | 2124407008   | Tact Switch   |           | 15  |
| Ì |  |  | E.U.P   |           |   |
| Δ | PT001<br>FL001   | 2335565001<br>3934030004<br>2050350009<br>2160039003<br>2048224008   | Power Trans 7BT16ZA (FLD) Antenna Terminal Front End 2P Pin Jack  | • • • •   | 1<br>1<br>1<br>1<br>1                               |
| Ì |  | ОТ   | HER PARTS   |           |   |
|   | CN301<br>CN701<br>CN702,<br>703  | 2221371105<br>2090008146<br>2090008120<br>EP-5667H1<br>1460858008<br>1460857009<br>2034362009<br>2034362009<br>2042197018<br>2042197005<br>2050190036<br>2050190078                | (P.W. Board) Jumper Wire P=5mm Jumper Wire P=10mm Terminal Pin LED Holder FLD Holder 3P Connector Cord 7P Connector Cord 7P Connector Base 7P NH Connector Base   | •         | 1<br>3<br>66<br>8<br>1<br>1<br>1<br>2<br>1<br>3     |
|   |  |  |   |           |   |

ETC0852 TUNER UNIT PARTS LIST for U.K (J220 or J240) means only difference of jumper for selecting power voltage between 220V and 240V.

<sup>•</sup> indicates the parts newly used in this unit.

### ETC0861D TUNER UNIT PARTS LIST (for 2 Band)

| Ref. No.       | Part No.     | Part Name & Des  | criptions          |
|----------------|--------------|--|--------------------|
|                | SEMI         | CONDUCTORS   |                    |
|                | 2630438008   | LA1266 (Sanyo)   | IC •               |
| C001           |              | LA3401 (Sanyo)   | ic •               |
| C002           | 2630439007   | TD6104P (Toshiba)  | ic                 |
| C003           | 2630232000   |  | ic                 |
| C004           | 2620452104   | TC9147BP (Toshiba)   | ic                 |
| C005           | 2620453006   | TD6301AP (Toshiba)   | ic                 |
| C006           | 2620300007   | HD14011BP (Hitachi)  |                    |
| TR001          | 2730025023   | 2SC461(C)  | Transistor         |
| R002<br>-004   | 27303,22001  | 2SC2458(Y/GR)  | Transistor         |
| TR006,         | 2730322001   | 2SC2458(Y/GR)  | Transistor         |
| TR008          | 2750053004   | 2SK365(BL/GR)  | FET                |
| rR009,         | 2730322001   | 2SC2458(Y/GR)  | Transistor         |
| 010            | 2710194000   | 2SA1048(Y/GR)  | Transistor         |
| TR011<br>TR012 | 2730322001   | 2SC2458(Y/GR)  | Transistor         |
| ~014           | 0700400015   | 2SC1815(BL)  | Transistor.        |
| TR015          | 2730198015   |  | Transistor         |
| TR016          | 2730322001   | 2SC2458(Y/GR)  | FET                |
| TR017          | 2750053004   | 2SK365(BL/GR)  | . — .              |
| TR018          | 2740065002   | 2SD880(Y)  | Transistor         |
| TR019          | 2730322001   | 2SC2458(Y/GR)  | Transistor         |
| TR020          | 2730198015   | 2SC1815(BL)  | Transistor         |
| TR021,         | 2710194000   | 2SA1048(Y/GR)  | Transistor         |
| 022            |              |  |                    |
| TR023          | 2750053004   | 2SK365(BL/GR)  | FET                |
| TR024,         | 2730322001   | 2SC2458(Y/GR)  | Transistor         |
| 025            | Ì            |  |                    |
| TR026          | 2710194000   | 2SA1048(Y/GR)  | Transistor         |
| TR027          | 2730322001   | 2SC2458(Y/GR)  | Transistor         |
| TR028<br>~030  | 2710194000   | 2SA1048(Y/GR)  | Transistor         |
| TR051          | 2730322001   | 2SC2458(Y/GR)  | Transistor         |
|                | 2710194000   | 2SA1048(Y/GR)  | Transistor         |
| TR052          | 2760049008   | 1\$2076  | Diode              |
| D001           |              | HZ4B-3   | Zener              |
| D002           | 2760185014   |  | Diode              |
| D003~006       | 2760049008   | 1S2076   | Zener              |
| D007           | 2760051054   | HZ7A-1   | Zener              |
| D008           | 2760255038   | HZ12C-2  | Zenei              |
| D009           | 2760446009   | PB103M   | Disals             |
| D010           | 2760049008   | 1S2076   | Diode              |
| D011,012       | 2760302004   | SVC321SP-D2  | Varactor           |
| D051           | 2760049008   | 1S2076   | Diode              |
| LE011          | 3939173005   | LT9213R (Red)  | LED                |
| LE012          | 3939356000   | LT9233 (Green)   | LED                |
| LE031          | 3939356000   | LT9233 (Green)   | LED                |
| LE032          | 3939173005   | LT9213R (Red)  | LED                |
| ~039           | 0000170005   |  |                    |
| LE040,         | 3939356000   | LT9233 (Green)   | LED                |
| 041            |              | uded Carbon Film ±5%,  | 1/AW Type)         |
| RESI           | 1            |  | /2W Carbon Film    |
| R304           | 2410193000   | The second secon | W Metal Oxide      |
| R315           | 2440033020   | 220 Ulling 15%   | (NBF)              |
|                |              |  |                    |
|                |              | CAPACITORS   |                    |
| C001           | 2538014003   | [ 0.01μF ±20%, 4   | HOOV ACE CERTIFICE |
| C101           | 2531024003   | 0.01µF +80,-20% 5  | 50V Ceramic        |
| C102~104       |              | 0.047µF +80,-20% 5   | OV Ceramic         |
| C105           | 2531024003   | 0.01 <sub>µ</sub> F +80,-20% 5   |                    |
| C106,107       | 2544237036   | 1.7 /4.  | 16V Electrolytic   |
| C108           | 2544237007   | 10/6.  | 16V Electrolytic   |
| C111           | 2544237036   |  | 16V Electrolytic   |
| C112           | 2544243017   |  | 50V Electrolytic   |
| C113           | 2544241006   |  | 35V Electrolytic   |
| 1              | 2544237007   | 1.17 /00.  | 16V Electrolytic   |
| C114           | 2544243033   | 10/11  | 50V Electrolytic   |
| C115           |              | 0.047µF +80,-20%   |                    |
| C117           | 1 2531026001 |  |                    |

| Ref. No.         | Part No.   | Part Name & Descrip                   | ptions                       |
|------------------|------------|---------------------------------------|------------------------------|
| C118             | 2533627000 | 100pF ±5% 50V                         | Ceramic                      |
| C119             | 2531024003 | $0.01\mu F +80,-20\% 50V$             | Ceramic                      |
| C120             | 2531026001 | 0.047µF +80,-20% 50V                  | Ceramic                      |
| C201             | 2544237001 | 10μF 16V                              | Electrolytic                 |
| C202             | 2544237049 | 100μF 16V                             | Electrolytic<br>Electrolytic |
| C203             | 2544243017 | 1μF 50V                               | Electrolytic                 |
| C204             | 2544243004 | 0.47μF 50V                            | Electrolytic                 |
| C205,206         | 2544243017 | 1μF 50V                               | Ceramic                      |
| C207             | 2531026001 | 0.047µF +80,-20% 50V<br>330pF ±5% 50V | Ceramic                      |
| C208             | 2533639001 | 000p.                                 | Electrolytic                 |
| C209             | 2544237007 | 10μ.                                  | Ceramic                      |
| C210,211         | 2534350004 |                                       | Electrolytic                 |
| C212             | 2544243033 | 3.3μF 50V<br>0.01μF +80,-20% 50V      | Ceramic                      |
| C213             | 2531024003 | 3.3µF 50V                             | Electrolytic                 |
| C214,215         | 2544243033 | 2700pF ±10% 25V                       | Ceramic                      |
| C216,217         | 2539031069 | 0.039μF ±10% 25V                      | Ceramic                      |
| C218,219         | 2539035036 | 1800pF ±10% 25V                       | Ceramic                      |
| C220,221         | 2539031056 | 0.47µF 50V                            | Electrolytic                 |
| C301             | 2544243004 | 0.11/2.                               | Ceramic                      |
| C302,303         | 2533635005 | 220pF ±5% 50V<br>  1000µF 25V         | Electrolytic                 |
| C311             | 2544239092 | 1000µF 25V                            | Electrolytic                 |
| C312             | 2544237007 | 10μF 16V                              | Electrolytic                 |
| C313             | 2544237049 | 100μF 16V                             | Electrolytic                 |
| C314             | 2544237007 | 1044                                  | 21000101,110                 |
| ~316             | 2531024003 | 0.01 µF +80,-20% 50V                  | Ceramic                      |
| C317             | 2531024003 | 0.01µF +80,-20% 50V                   | Ceramic                      |
| C321,322         | 2590004006 |                                       | p Capacitor                  |
| C351             | 2531024003 | 0.01µF +80,-20% 50V                   | Ceramic                      |
| C401             | 2544235025 | 47 <sub>µ</sub> F 10V                 | Electrolytic                 |
| C402<br>C403~406 | 2531024003 | 0.01 µF +80,-20% 50V                  | Ceramic                      |
|                  | 2544235038 | 100µF 10V                             | Electrolytic                 |
| C407             | 2531024003 | 0.01µF +80,-20% 50V                   | Ceramic                      |
| C408             | 2533618006 | 43pF ±5% 50V                          | Ceramic                      |
| C409,410         | 2531024003 | 0.01µF +80,-20% 50V                   | Ceramic                      |
| C411,412         | 2544243020 | 2.2µF 50V                             | Electrolytic                 |
| C413,414         | 2544243024 | 0.47 <sub>µ</sub> F 50V               | Electrolytic                 |
| C415             | 2531024003 | 0.01µF +80,-20% 50V                   | Ceramic                      |
| C416             | 2544241006 | 4.7µF 35V                             | Electrolytic                 |
| C417,418         | 2531024003 | 0.01 <sub>µ</sub> F +80,-20% 50V      | Ceramic                      |
| C419             | 2531024003 | 0.01µF +80,-20% 50V                   | Ceramic                      |
| C421             | 2544237049 | 100µF 16V                             | Electrolytic                 |
| C431             | 2543016009 | 1μF 50V                               | Electrolytic                 |
| C432             | 2543010009 | 1/41                                  | (By Pole)                    |
| C433             | 2531025002 | 0.022µF +80,-20% 50V                  | Ceramic                      |
| 1                | 2549011008 | 1μF 50V                               | Electrolytic                 |
| C434             | 25.55.1555 |                                       | (Low Leak)                   |
| C435             | 2531024003 | 0.01μF +80,-20% 50V                   | Ceramic                      |
| C441             | 2531026001 | 0.047µF +80,-20% 50V                  | Ceramic                      |
| C442             | 2533125007 | 15pF ±5%                              | Ceramic                      |
| 0772             |            | ,                                     | (Temp.)                      |
| C443             | 2554201049 | 390pF ±5% 50V                         | Plastic Film                 |
| C501             | 2531024003 | 0.01µF +80,-20% 50V                   | Ceramic                      |
| C502~504         | 2539030028 | 2200pF ±10% 25V                       | Ceramic                      |
| C601             | 2544243033 | 3.3µF ±20% 50V                        | Electrolytic                 |
| C602             | 2544243004 | 0.47μF ±20% 50V                       | Electrolytic                 |
| C603             | 2544237052 | 220µF ±20% 16V                        |                              |
| TC001            | 2130022008 | Trimmer Condenser                     | 1                            |
|                  |            |                                       |                              |
|                  |            | 1                                     |                              |
|                  |            |                                       |                              |
|                  |            | COIL, TRANS                           |                              |
| L201,202         | 2350032014 | Inductor 39mH                         | 2                            |
| T001             | 2312060008 | FM IF Det. Trans                      | • 1                          |
| T003             | 2313028007 | AM IFT                                | • 1                          |
| T004             | 2320106006 | Anti Birdie Filter                    | • 1                          |
| T011             | 2311122002 | MW Ant. Trans                         | • 1                          |
| T012             | 2311123001 | MW OSC Coil                           | • 1                          |
| BT1              | 2310074009 | Balun Trans                           | •   1                        |
|                  |            | i i                                   | 1 1                          |

| Ref. No.               | Part No.                 | Part Name & Descr                             | riptions |     |
|------------------------|--------------------------|---|----------|-----|
| CF001,                 | 2610064007               | FM Ceramic Filter<br>(SFT10.7MS2)             |          | 2   |
| 002<br>CF003<br>CF004  | 2610031001<br>2610079005 | AM Ceramic Filter (BFU                        | 450C4)   | 1   |
| XL001                  | 3990031005               | (CSB456F11)<br>X-tal (7.2MHz)                 | ,        | 1   |
|                        | S                        | SWITCHES                                      |          |     |
| sw001                  | 2129543006               | 1P Push Switch (Mode)<br>1P Push Switch (MPX) | •        | 1   |
| SW002<br>SW003         | 2124630008<br>2124629006 | 1P Push Switch (Power) Tact Switch            | •        | 2   |
| SW011,<br>012<br>SW014 | 2124407008               | Tact Switch                                   |          | 12  |
| ~025                   |                          |   |          |     |
|                        |                          | E.U P   |          | 1   |
| PT001<br>FL001         | 2335565001<br>3934030004 | Power Trans<br>7BT16ZA (FLD)                  | •        | 1   |
|                        | 2050350009               | Antenna Terminal Front End                    | •        | 1 1 |
|                        | 2160039003<br>2048224008 | 2P Pin Jack                                   |          | 1   |
|                        | 01                       | THER PARTS                                    |          | 1   |
|                        | 2221396009               | (P.W. Board)<br>Jumper Wire P=5mm             | •        | 1 3 |
|                        | 2090008146<br>2090008120 | Jumper Wire P=10mm                            |          | 66  |
| Ì                      | EP-5667H1<br>1460858008  | Terminal Pin<br>LED Holder                    | •        | 8   |
|                        | 1460857009               | FLD Holder                                    | •        | 1   |
| CN301<br>CN702,        | 2034362000<br>2042197005 | 3P Connector Cord<br>7P Connector Cord        |          | 1 2 |
| 703                    | 2050190036               | 3P NH Connector Base                          |          | 1   |
| CN701                  | 2050190078<br>2042197018 | 7P NH Connector Base<br>7P Connector Cord     | •        | 3   |
|                        |                          |   |          |     |
|                        |                          |   |          |     |
|                        |                          |   |          |     |
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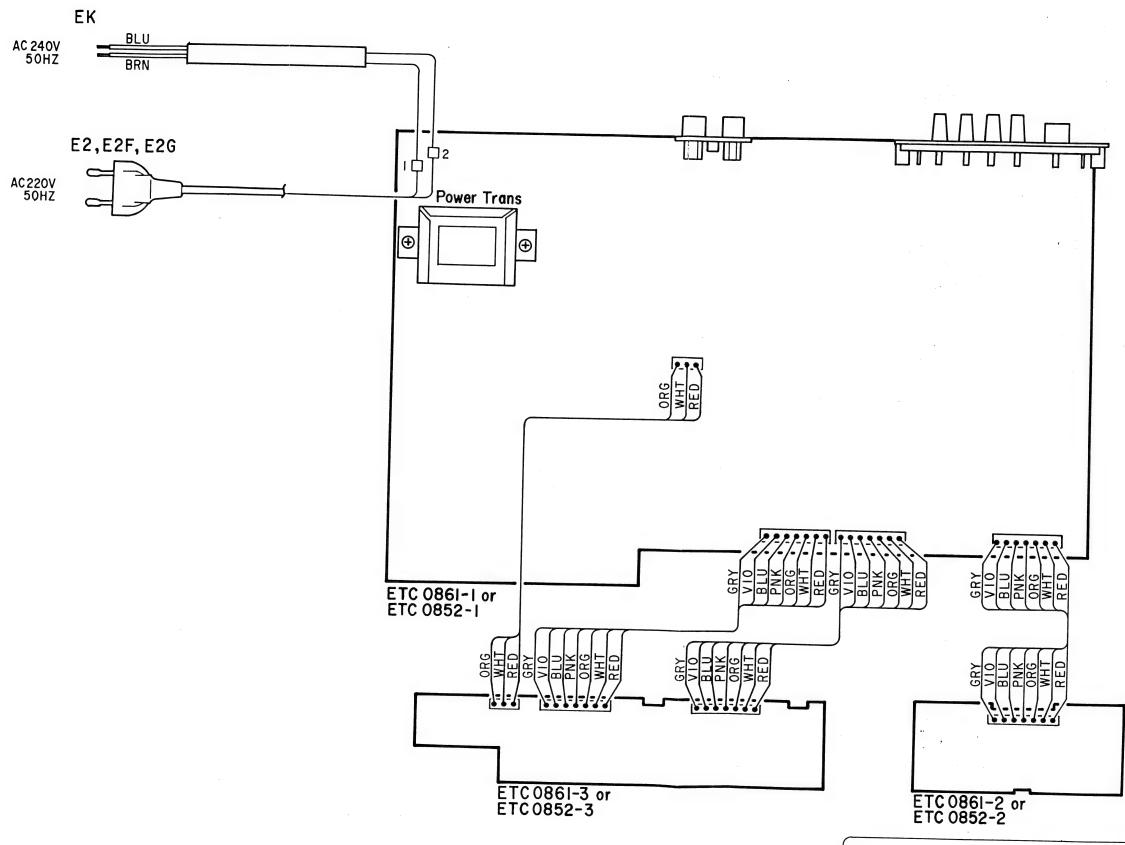
### **– 13 –**

## ETC0861 TUNER UNIT PARTS LIST for GERMANY (Same as ETC0861D TUNER UNIT P/LIST except the followings.)

| TIE TOHOW | te followings./ |  |  |  |  |  |  |  |  |  |  |
|-----------|-----------------|--|--|--|--|--|--|--|--|--|--|
| Ref. No.  | Part No.        | Part Name & Descriptions                 |  |  |  |  |  |  |  |  |  |
| RESISTOR  |                 |  |  |  |  |  |  |  |  |  |  |
| R108      | 2412120000      | 15k ohm ±5% 1/4W Carbon Film<br>(Change) |  |  |  |  |  |  |  |  |  |
|           | CAP             | ACITORS                                  |  |  |  |  |  |  |  |  |  |
| C302,303  | 2533635005      | 220pF ±5% 50V Carbon (Delete)            |  |  |  |  |  |  |  |  |  |
|           | (               | COILS                                    |  |  |  |  |  |  |  |  |  |
| L601      | 2350016014      | 18µH Inductor (Add.)                     |  |  |  |  |  |  |  |  |  |

<sup>•</sup> indicates the parts newly used in this unit.

### WIRING DIAGRAM



|        | ·                  |          |
|--------|--------------------|----------|
|        | Model Name         | Unit No. |
| 2 Band | Black for European | ETC0861D |
| 2 Band | Black for Germany  | ETC0861  |
| 2 Band | Gold for Germany   | ETC0861  |
| 3 Band | Black for European | ETC0852B |
| 3 Band | Black for U.K.     | ETC0852  |
| 3 Band | Black for France   | ETC0852  |
|        |                    |          |
|        |                    |          |
|        |                    |          |

CAUTION

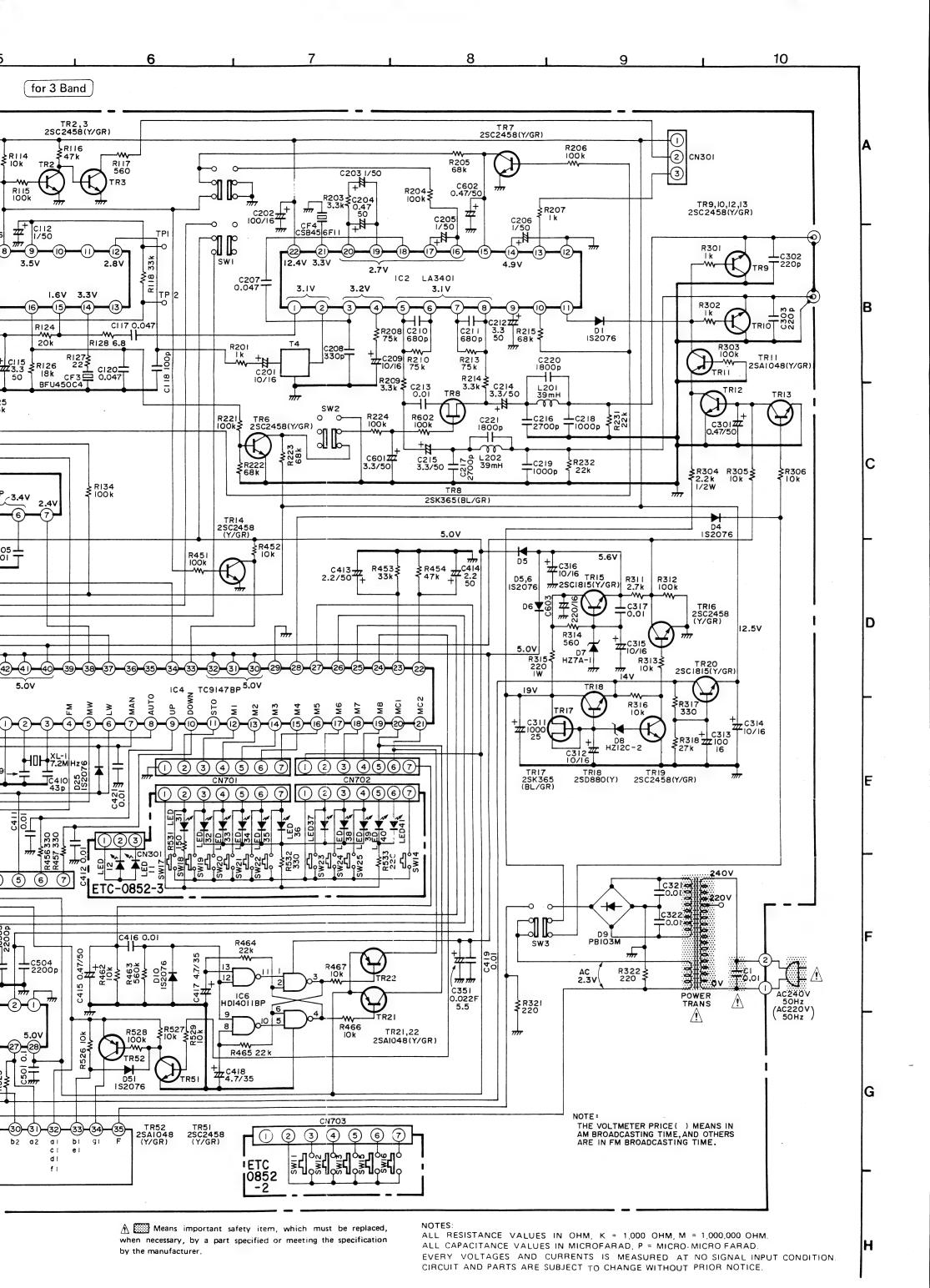
- With the power switch in "Stand by" mode, mains is still connected. WICHTIGER HINWEIS — Auch bei auf "Betriebsbereitschaft" gestelltem Netzschalter wird das Gerät noch mit Strom versorgt.

PRECAUTION OBS!

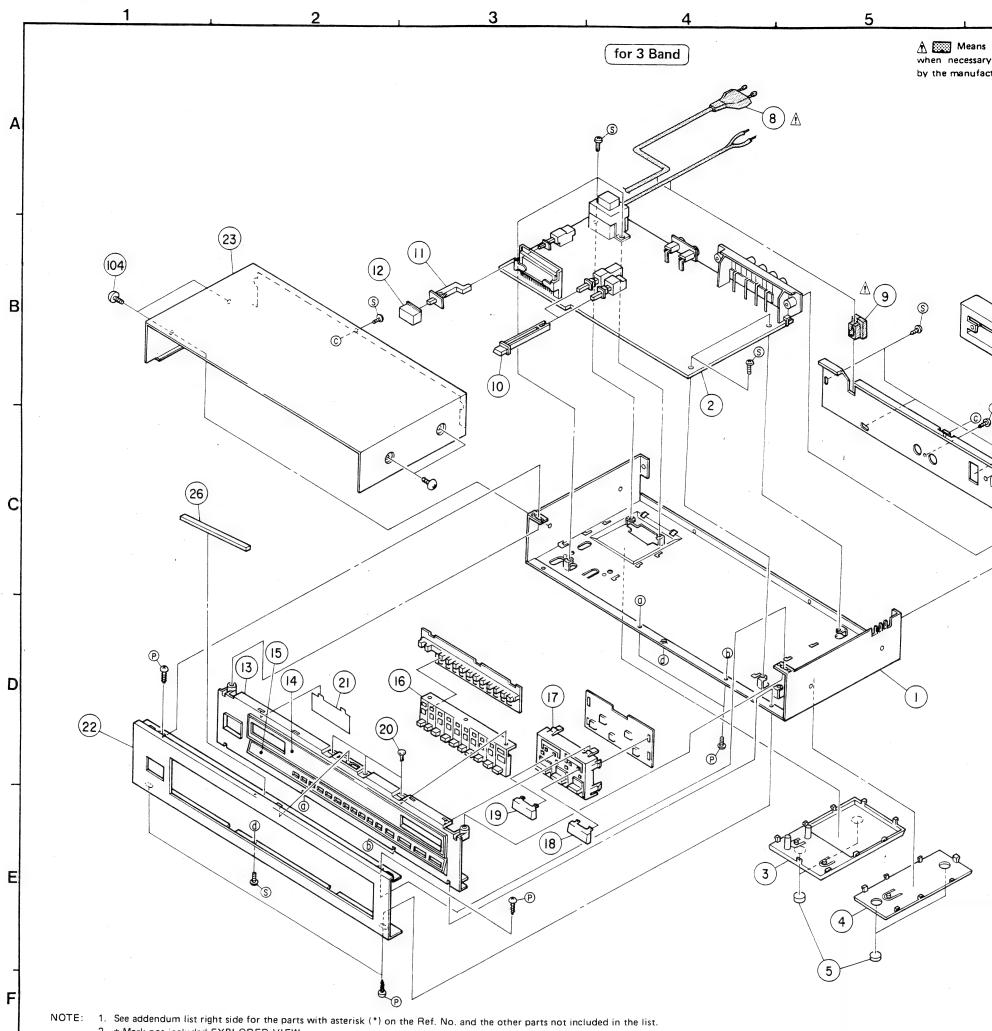
L'interrupteur d'alimentation sur "stand by" (attente), l'alimentation n'est pas coupée.

– Nätströmtillförseln kopplas inte ur när strömbrytaren står i beredskapsläget (Sa nd by).

5 for 3 Band ETC-0852-1 TR2,3 2SC2458(Y/GR) R116 47k T0.01 ₹ 600 10k RI 17 560 RI05 mm 330 7.6V(9.3V) R103 ≱ 8.2k ₹ 11.8V FRONT - END CF2 SFTIOMS2 igi 280461早 FM75Ω CI 03 = C104 100 RIO4 | RIO6 | I k 2.3V SFTIOMS2 GND 2.8V 3.5V 7.6V(9.3V) FM 300Ω osc ICI LAI266 RIO7 .8V 3.2V 3.5V 3.4V (9.3V) BT-I 1.6V 3.3V GND R433 C105 R123 5.1k ##CI06 47/16 **★** D3 10/16 R128 6.8 AM C113 4.7 2 35 C1 14 10/16 + + C115 -1 27 \$ 273.3 50 152076 RIO8 8.0V D2 "" HZ4B-3 C435 0.01 4.7k RI26 22 € CI20 = 18k CF3 = 0.047 BFU450C4 R415 33k R411 C451 0.047 TR4 2SC2458(Y/GR) R421 100k ₹ RI34 ₹ 100 k IC3 TD6104P\_3.4V R412 100k 5.0V 3.9V (IZV) -W-022 R601 470 C40227 C403 47/10 0.01 D24 C405 -R422 100k D23,24 IS2076 TR41-44 2SC2458(Y/GR) DII,12,21,22 SVC321SP-D2 R402 100 12.5V R417 ≱ C407 # C408-C431 # C432 1/50 BP R405 ≱ ₹R404 220 C406 0.01 5.0V R403 8.2k R408 **TR25** TR27 **TR47** TR23 2SK365 (BL/GR) R455 330 C409 43p ≹R418 10k TR24 2SC2458 (Y/GR) R426 10k ≹R432 ₹ 10k (4.9V LW) (4.9V MW) 4.90 TR25, 27, 47 2SC2458(Y/GR) CN703 ( - )(2) (3) 4 (5) 6 ETC-0852-R501 } ≹R502 100 k C416 0.01 ≱R503 ₹100k TR29,30,48 TR29 2SAI048 (Y/GR) C41 TR30 IC5 TD630IAP R528 100k ŏ. 27<u>2</u>8 TR52 D51 1S2076 FM b5 94 MHz c5 D.P (B) G -(14)-(15)-b4 a4 (35) F TR5 2SAIC (Y/GI (12) (13) LW MW KHZ G f4 **e**4 d3 c3 bı eı d4 c4 93 f3 b3 a3 92 f2 b2 **a** 2 gi d l fi FLD 7-BT-16ZA



**– 15 –** 



- 2. \* Mark not included EXPLODED VIEW.
- 3. The list is prepared based on E2 for Black Version.
- 4. indicates the parts newly used in this unit.

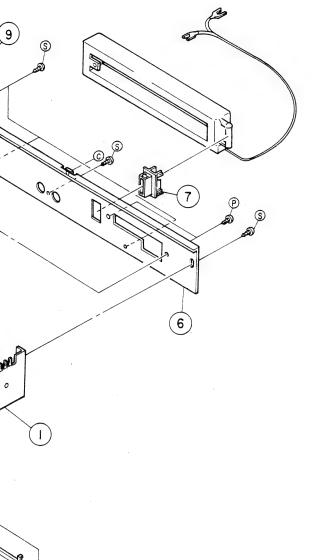
### EXPLODED VIEW OF CHASSIS AND CABINET

|   | Ref.<br>No. | Part No.   | No. Part Name & Descriptions |     | Q'ty |
|---|-------------|------------|------------------------------|-----|------|
|   | 1           | 4110595016 | CHASSIS                      | •   | 1    |
|   | *2          | ETC0852B   | TUNER UNIT                   | •   | 1s   |
|   | 3           | 1030948005 | BOTTOM COVER (A)             | •   | 1    |
|   | 4           | 1030949004 | BOTTOM COVER (B)             | •   | 1    |
|   | 5           | 4610162004 | FELT PAD                     |     | 4    |
|   | *6          | 1050715001 | BACK PANEL •                 | •   | 1    |
|   | 7           | 1460859007 | ANT. HOLDER                  | •   | 1    |
|   | <b>∆ *8</b> | 2062047009 | AC CORD                      |     | 1    |
|   | <b>∆</b> *9 | 4450056008 | CORD BUSH                    |     | 1    |
|   | **10        | 1130866003 | PUSH KNOB (C)                | •   | 2    |
|   | 11          | 1190057001 | KNOB JOINT .                 | •   | 1    |
|   | **12        | 1130854002 | PUSH KNOB (P) (POWER)        |     | 1    |
|   | **13        | 1460851005 | INNER PANEL •                | •   | 1    |
|   | **14        | 1430491000 | WINDOW PLATE •               | •   | 1    |
| 1 | *15         | 1430492009 | ESC PLATE •                  | •   | 1    |
|   | **16        | 1130860009 | PUSH KNOB (A)                | •   | 1    |
|   | **17        | 1130861008 | PUSH KNOB (B) (TUNING)       | •   | 1    |
|   | **18        | 1130862007 | KNOB CAP (D) (TUNING)        | •   | 1    |
|   | **19        | 1130862010 | KNOB CAP (D) (TUNING)        | •   | 1    |
|   | 20          | 4770096007 | PUSH RIVET                   |     | 3    |
|   | 21          | 1430493008 | FILTER                       | - 1 | 1    |
|   | **22        | 1441541004 | FRONT PANEL . •              | •   | 1    |
|   | 23          | 1020262005 | TOP COVER •                  | .   | 1    |
| 1 | 24          | 5138253009 | APPROVAL MARK                | ı   | 1    |
| - | <b>*25</b>  | 4450033005 | WIRE CLAMP BAND              |     | 1    |
| 1 | 26          |            |                              |     | - 1  |
| 1 | 27          |            |                              |     |      |
| 1 |             |            | !                            | - 1 | 1    |

| Ref.<br>No.            |                                       |  |      | Q'ty                                      |  |  |  |  |
|------------------------|---------------------------------------|--|------|---|--|--|--|--|
|                        | SCREWS                                |  |      |   |  |  |  |  |
| 101<br>102<br>103      | 102 4737508017 TAPPING SCREW (P) 3x10 |  | <    | 12<br>8                                   |  |  |  |  |
| 104<br>105<br>106      | 105                                   |  |      |   |  |  |  |  |
| PAC                    | KING & ACCESS                         | ORIES (not included EXPLODED \   | /IE\ | N)  |  |  |  |  |
| PACKING & ACCESSO  201 |                                       | CABINET COVER CUSHION CARTON CASE  ENVELOPE LOOP ANTENNA 2P CONNECTOR CORD INST. MANUAL COLOR LABEL (BLACK) CONTROL CARD | •    | 1<br>2<br>1<br>1<br>1<br>1<br>1<br>2<br>1 |  |  |  |  |

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Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.



### ADDENDUM LIST

| D ( N                      |  | Part No.  |   |   |   |  |  |
|----------------------------|--|---|---|---|---|--|--|
| Ref. No.                   | Part Name & Descriptions                           | EK for U.K.   | E2F for France  | · |   |  |  |
| 2<br>6<br>& 8<br>& 9<br>15 | TUNER UNIT BACK PANEL AC CORD CORD BUSH ESC. PLATE | ETC0852<br>1050693000<br>2062051008<br>4450056008<br>1430492009 | ETC0852<br>1050702001<br>2062047009<br>4450056008<br>1430492009 |   |   |  |  |
| 104                        | TAPPING SCREW (4x8)                                | 4734454038  | 4734454038  |   |   |  |  |
| 203<br>209                 | CARTON CASE<br>COLOR LABEL                         | 5011141005<br>5139111014  | 5011141018<br>5139111014  |   |   |  |  |
|                            |  |   |   | _ |   |  |  |
|                            | . · · · · · · -                                    |   |   |   |   |  |  |
|                            |  |   |   |   |   |  |  |
|                            |  |   |   |   |   |  |  |
|                            |  |   |   |   |   |  |  |
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|                            |  |   |   |   |   |  |  |
|                            |  |   |   |   |   |  |  |

For United Kingdom model only.

### WARNING:

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

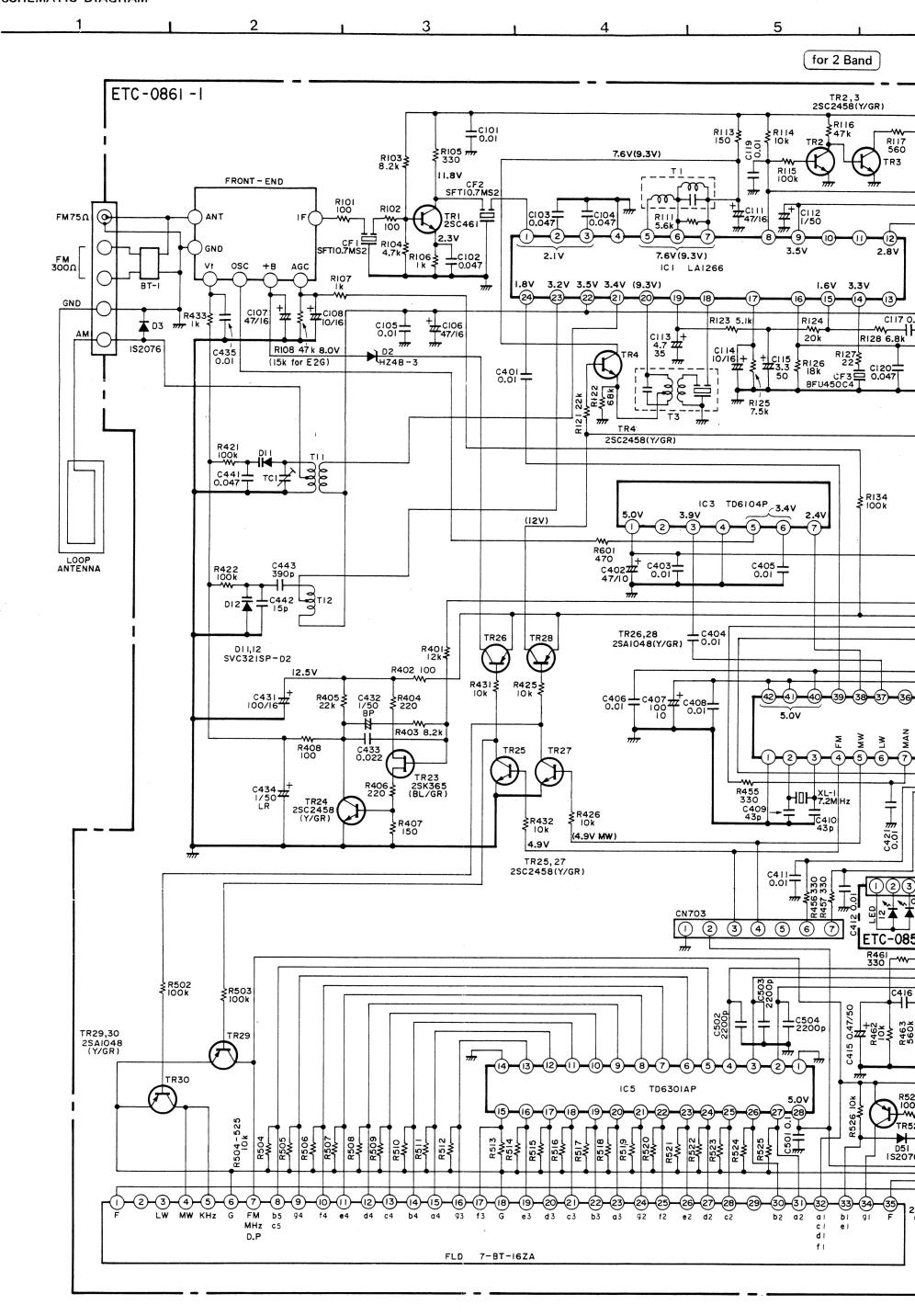
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

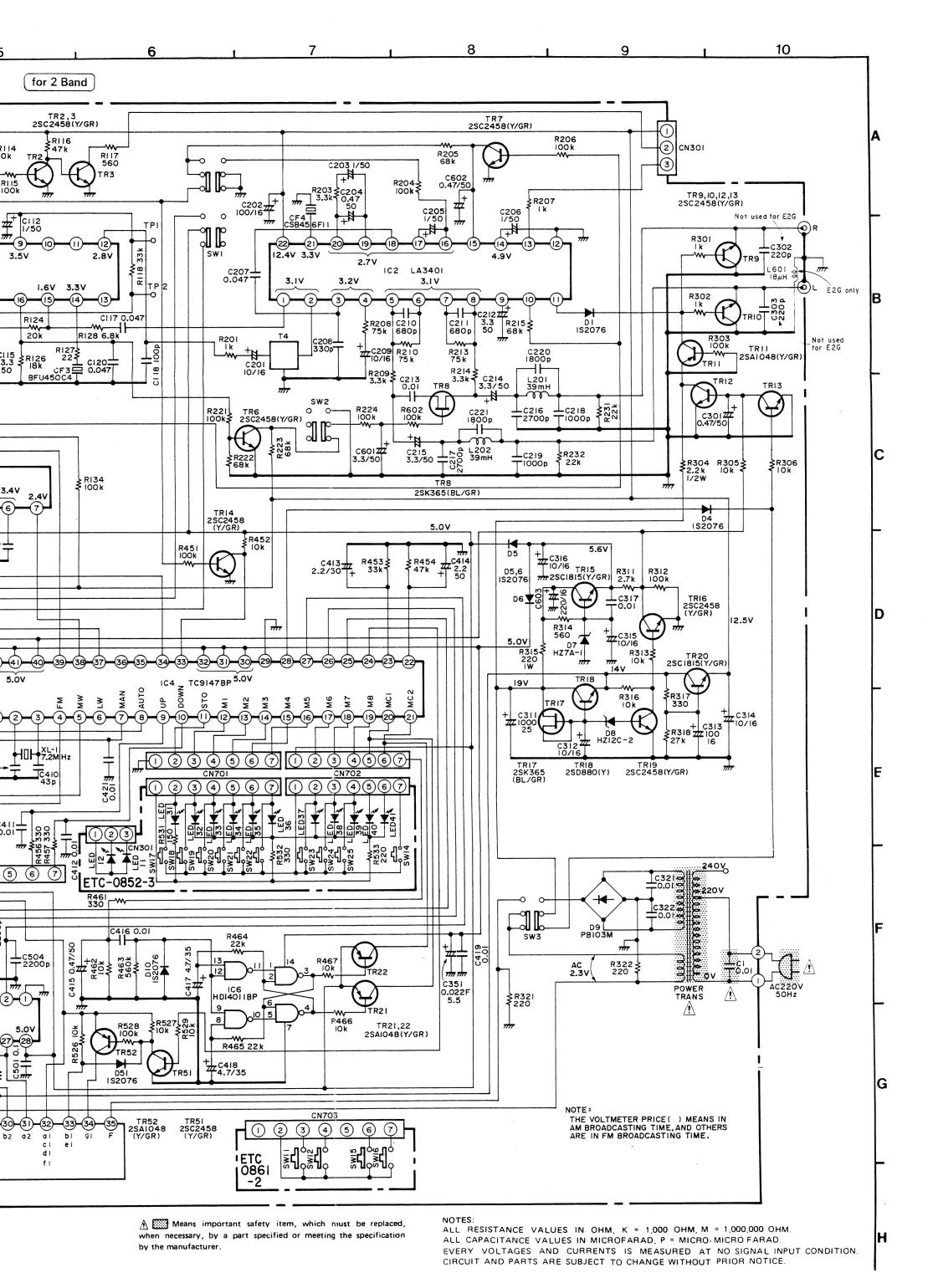
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

### **IMPORTANT**

The wires in this mains lead are coloured in accordance with the following code:

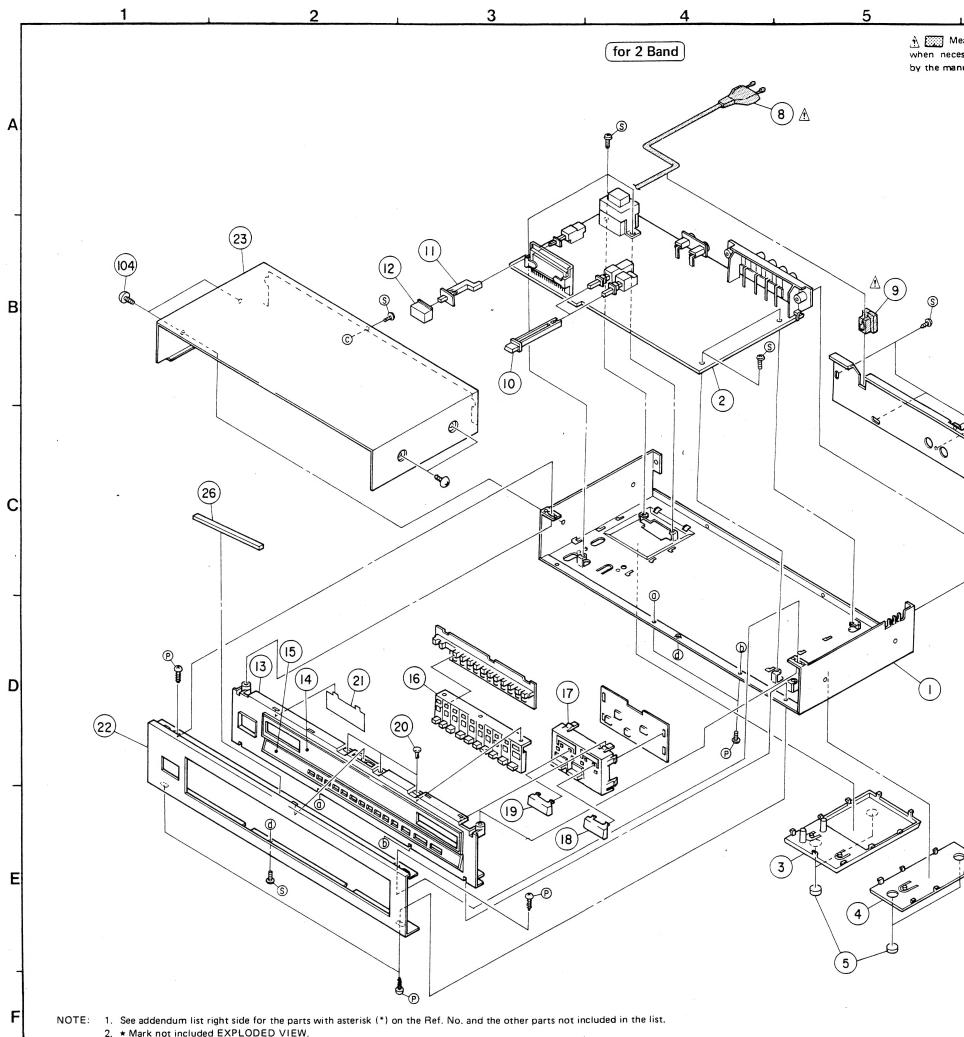
Blue: Neutral Brown: Live





TU450/450L

### EXPLODED VIEW OF CHASSIS AND CABINET



2. \* Mark not included EXPLODED VIEW.

3. The list is prepared based on E2 for Black Version.

4. • indicates the parts newly used in this unit.

### EXPLODED VIEW OF CHASSIS AND CABINET PARTS LIST

| Ref.<br>No. | Part No.           | Part Name & Descriptions |   | Q'ty   | Ref.<br>No. | Part No.      | Part Name & Descriptions         | Q'ty          |
|-------------|--------------------|--------------------------|---|--------|-------------|---------------|----------------------------------|---------------|
| 1           | 4110595016 CHASSIS |                          | 1 | SCREWS |             |               |                                  |               |
| *2          | ETC0861D           | TUNER UNIT               |   | 1s     |             | <u> </u>      | Γ                                |               |
| 3           | 1030948005         | BOTTOM COVER (A)         | 1 | 1      | 101         | 4737002021    | TAPPING SCREW (S) 3x8 BLACK      | 12            |
| 4           | 1030949004         | BOTTOM COVER (B)         |   | 1      | 102         | 4737508017    | TAPPING SCREW (P) 3x10 BLACK     | 8             |
| 5           | 4610162004         | FELT PAD                 |   | 4      | 103         | -             | -                                |               |
| *6          | 1050693000         | BACK PANEL               |   | 1      | *104        | 4734454038    | TRUSS TAPPING SCREW (2) 4×8      | 4             |
| 7           | 1460859007         | ANT. HOLDER              |   | 1      | 105         |               |                                  | 1 1           |
| Δ *8        | 2062047009         | AC CORD                  |   | 1      | 106         |               |                                  | 1 1           |
| <b>∆</b> *9 | 4450056008         | CORD BUSH                |   | 1      |             | L             |                                  |               |
| **10        | 1130866003         | PUSH KNOB (C)            |   | 2      | PACK        | ING & ACCESSO | ORIES (not included EXPLODED VIE | (W)           |
| 11          | 1190057001         | KNOB JOINT               |   | 1      |             |               |                                  | $\overline{}$ |
| **12        | 1130854002         | PUSH KNOB (P) (POWER)    |   | 1      | 201         | 5050133003    | CABINET COVER                    | 1             |
| **13        | 1460851005         | INNER PANEL              | • | 1      | 202         | 5030576004    | CUSHION                          | 2             |
| **14        | 1430491000         | WINDOW PLATE             |   | 1      | *203        | 5011141034    | CARTON CASE •                    | 1             |
| *15         | 1430492012         | ESC PLATE                |   | 1      | 204         | _             | _                                |               |
| **16        | 1130860009         | PUSH KNOB (A)            |   | 1      | 205         | PC-3244       | ENVELOPE                         | 1             |
| **17        | 1130861008         | PUSH KNOB (B) (TUNING)   |   | 1      | 206         | 2311126008    | LOOP ANTENNA •                   | 1             |
| **18        | 1130862007         | KNOB CAP (D) (TUNING)    |   | 1      | 207         | 2032101001    | 2P CONNECTOR CORD                | 1             |
| **19        | 1130862010         | KNOB CAP (D) (TUNING)    |   | 1      | 208         | 5111476007    | INST. MANUAL •                   | 1             |
| 20          | 4770096007         | PUSH RIVET               |   | 3      | *209        | 5139111014    | COLOR LABEL (BLACK)              | 2             |
| 21          | 1430493008         | FILTER                   |   | 1      | 210         | 5131167008    | CONTROL CARD                     | 1             |
| **22        | 1441541017         | FRONT PANEL              | • | 1      | 211         |               |                                  |               |
| 23          | 1020262005         | TOP COVER                |   | 1      | 212         |               |                                  | 1 1           |
| 24          | 5138253009         | APPROVAL MARK            |   | 1      |             |               |                                  |               |
| <b>★25</b>  | 4450033005         | WIRE CLAMP BAND          |   | 1      | 1           |               |                                  |               |
| 26          | 4610319006         | SPACER                   |   | 1      | 1           | 1             |                                  |               |
| 27          |                    |                          |   |        | I           |               |                                  |               |
| 28          |                    |                          |   |        |             |               |                                  |               |

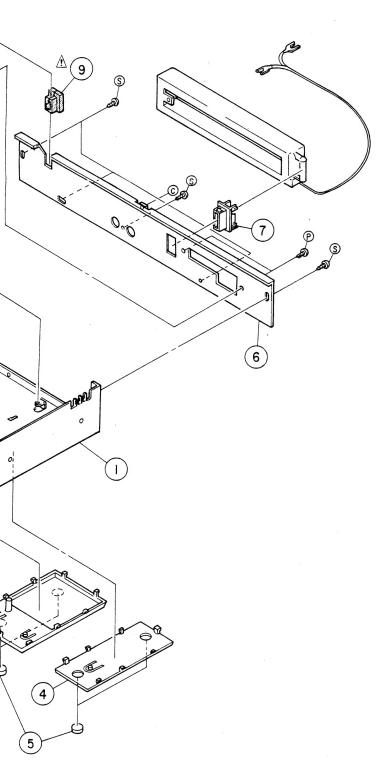
### **E2 Gold Version PARTS LIST** (Same as E2 BLACK VERSIOI

| except the followings.)             |  |  |  |  |  |  |  |
|-------------------------------------|--|--|--|--|--|--|--|
| Ref.<br>No.                         | Part No.   | Part Na  |  |  |  |  |  |
| 12<br>22<br>23<br>104<br>203<br>209 | 1130854015<br>1441541020<br>1020262018<br>4734801005<br>5011141063<br>5139111001 | PUSH KNO<br>FRONT PA<br>TOP COVEI<br>TRUSS TAF<br>CARTON C<br>COLOR LA |  |  |  |  |  |

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Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.



Id Version PARTS LIST as E2 BLACK VERSION (Left P/List) the followings.)

|  |  | 1                     |
|--|--|-----------------------|
| 1130854015<br>1441541020<br>1020262018<br>4734801005<br>5011141063<br>5139111001 | PUSH KNOB (P) FRONT PANEL TOP COVER TRUSS TAPPING SCREW 4x8 CARTON CASE COLOR LABEL (GOLD) | 1<br>1<br>4<br>1<br>2 |

Part Name & Descriptions

### ADDENDUM LIST

| D-4 N-                             | Port Name 9. Description                           | Part No.  |   |  |   |  |
|------------------------------------|--|---|---|--|---|--|
| Ref. No.                           | Part Name & Descriptions                           | E2G for Germany   |   |  |   |  |
| 2<br>6<br><b>A</b> 8<br><b>A</b> 9 | TUNER UNIT BACK PANEL AC CORD CORD BUSH ESC. PLATE | ETC0861<br>1050703000<br>2062047009<br>4450056008<br>1430492012 |   |  |   |  |
| 104                                | TAPPING SCREW (4×8)                                | 4734454038  |   |  |   |  |
| 203<br>209                         | CARTON CASE<br>COLOR LABEL                         | 5011141021<br>5139111014  |   |  |   |  |
|                                    |  |   |   |  |   |  |
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| L                                  |  |   |   |  |   |  |